FILE

ATION LIBRARY COP

PRODUCTION OF SHINGLES AND SAWED SHAKES IN CALIFORNIA, 1956

RICHARD H. MAY

FOREST SURVEY
RELEASE No. 31
MARCH - 1958

CALIFORNIA FOREST AND RANGE EXPERIMENT STATION
KEITH ARNOLD, DIRECTOR

FOREST SERVICE - U.S. DEPARTMENT OF AGRICULTURE

ACKNOWLEDGMENTS

The help of the shingle and shake mill operators of California in providing the information which made this report possible is gratefully acknowledged.

The California Forest and Range Experiment Station is maintained at Berkeley, California, by the Forest Service, U. S. Department of Agriculture, in cooperation with the University of California.

COVER PHOTO:

Sawed shakes at mill
near Ukiah, California

Agriculture--Forest Service--Berkeley

PRODUCTION OF SHINGLES AND SAWED SHAKES IN CALIFORNIA, 1956

By Richard H. May
Division of Forest Economics

Almost 36,000 squares[1/] of shingles and sawed shakes[2/] were cut by 26 mills in California in 1956, according to a survey completed by the California Forest and Range Experiment Station. Most of these shingles and shakes were cut from coast redwood in Mendocino and Humboldt counties. However, about 1,000 squares were cut from giant sequoia and sugar pine--largely in Fresno and Tulare counties.

Comparison with recent years

Total production of these products in 1956 continued a decline which has been in progress since a post-war peak around 1947:

Year:	Active mills (Number)	Production (Thousand squares)
1945	24	89
1946	90	131
1947	--	162
1950	42	1/ 113
1952	36	1/ 43
1956	26	36

1/ Estimates by the writer, from reported volumes of shingle and shake bolts.

Source: U.S. Bureau of the Census and U.S. Forest Service. Data not available for intervening years.

1/ A square of shingles or shakes is the amount that will cover 100 square feet of roof when laid 5 inches exposed (shingles) or 10 inches (shakes).

2/ Split shakes are not included here, but will be covered in a separate publication dealing with split products.

Slightly more shakes than shingles were sawed in 1956, but 10 years earlier 90 percent of the combined production was in shingles:

Year:	Shingles	Sawed Shakes	Total
	---------- Squares ----------		
1956	16,540	19,187	35,627
1/ 1946	114,572	13,425	127,997

1/ Preliminary figures in: May, R. H., and A. Simontacchi, 1947. "Production of lumber and other sawed products in California and Nevada, 1956." Calif. Forest and Range Expt. Sta. Forest Research Note No. 55. 9 pp., illus. (Table 4, page 7.)
Final Census figures showed 130,591 squares cut in California in 1946, but gave no breakdown between shingles and shakes.

Production of sawed shakes--also known as Hollywood shakes--increased 42 percent while shingle production decreased 86 percent in the decade--a startling reversal.

History

The shingle industry in California is old--at least 100 years--to judge by the fact that in 1859, 16 mills with 54 employees had an output valued at $59,550.3/ In 1869, when production figures were first recorded, more than 100 million pieces were produced (Table 1). Shingle production then increased to a peak of almost 888 million pieces in 1907. Thereafter production declined to a record low of 17 million pieces (21 thousand squares) in 1932. Shingle production then began to climb; it reached a minor peak in 1939, was interrupted by World War II when the need for shingles was limited, and reached a post-war peak about 1947.

3/ U. S. Dept. of the Interior, 1865. "Manufactures of the United States in 1860; compiled from the original returns of the Eighth Census, under the direction of the Secretary of the Interior." See page 36. (Year ending June 1, 1860.)

Sawed shakes were first made in California in the mid-1930's, but production was limited to a few mills and the total output was small until after World War II, when this product came into greater use because of its architectural attractiveness and long life.

Production by species

Coast redwood accounted for 93 percent of California's 1956 production of shingles and sawed shakes; 3 other species made up the rest:

Species:	Shingles	Sawed Shakes	Total
	---------- Squares ----------		
Redwood	15,635	17,412	33,047
Western redcedar 1/	0	1,500	1,500
Giant sequoia	745	165	910
Sugar pine	160	10	170
Total	16,540	19,087	35,627

1/ Bolts from Oregon and/or Washington.

Production by region and county

About 97 percent of the shingles and sawed shakes were produced in the Redwood Region, and Mendocino was the leading county in 1956 output:

Region and County:	Active mills (Number)	Production (Squares)
Redwood Region		
Mendocino	9	20,034
Humboldt	7) 1/	14,513
Santa Cruz	2)	
Total Region	18	34,547
Pine Region		
Fresno	4	560
Tulare	2)	
Tuolumne	1) 1/	520
El Dorado	1)	
Total Region	8	1,080

1/ Combined to prevent disclosure of individual operations.

Industry structure

Some mills produce only shingles, others only shakes, and a few produce both. Most mills are independent of other timber products manufacture, but in 1956 two were closely associated with sawmills. The sawmills used material not well suited for lumber to make shingles, thus extending the utilization of their raw material.

Number of shingle and sawed shake mills by region and type, California, 1956

Region and type of mill:	Shingle	Shake	Both	Total
	----- (Number of mills) -----			
Redwood Region				
Independent	6	8	2	16
Associated with sawmills	1	0	1	2
Subtotal	7	8	3	18
Pine Region				
Independent	6	2	0	9
Total	13	10	3	26

Differences between shingles and shakes

Shingles are sawed on both sides. Hollywood shakes are split on one side and sawed on the other; to make them, a split 2-inch thick "board" is resplit to form two "boards" averaging an inch thick (range 3/4 to 1-1/4 inches); each of these is then sawn lengthwise on the diagonal, so each of the two resulting sawed shakes has a taper. Shakes are about 1 inch thick at the butt and 24 inches long, compared to a shingle's two-fifths inch butt and 16-inch length.

Shakes are laid with 10 inches exposed to the weather--compared to 5 inches for shingles. Because shakes are thicker than shingles, there are fewer per bundle. Sawed shakes are usually packed about 40 per bundle, though the number varies from 32 to 48. Five bundles usually make a square, but those with fewer than 40 shakes require 6 or 8 bundles to make a square. Regardless of the bundles per square, an average of 200 sawed shakes make up a square. Shingles are rather uniformly packed 200 per bundle--4 bundles or 800 shingles per square.

Table 1.- Production and value of shingles in California in selected years, 1869-1956

Year	Active mills	Production of shingles[1]		Value
	Number	Million pieces	Thousand squares	Thousand dollars
1869	-	104	[2](129)	-
1879	-	139	(173)	-
1889	-	306	(382)	424
1899	-	650	(813)	693
1907[3]	-	888	(1,110)	-
1909	-	574	(718)	884
1919	40	192	(240)	802
1929	18	111	(139)	266
1932[4]	13	17	(21)	-
1939	28	(95)	[5]119	299
1943	26	(36)	45	-
1947	([6])	(130)	162	-
1956	26	(29)	36	-

Source: U. S. Bureau of the Census and U. S. Forest Service. Figures are available decennially, 1869-1899; annually, 1904-1912 and 1915-1947; and irregularly to the present.

1/ Shingles were reported in thousand pieces from 1869 through 1932, and in squares from 1933 through 1956.

2/ Figures in parentheses are equivalents at 800 shingles per square. The equivalents are only approximate in the earlier years, before standardization, and in the latest years (1939 on) since the advent of sawed shakes.

3/ Peak year of record.

4/ Lowest year of record.

5/ Totals from 1939 on include sawed shakes.

6/ No record 1947; 90 mills active in 1946.

SURVEY PROCEDURE

For this survey, the Station brought its list of shingle and shake mills in the State up to date, with the help of the California State Division of Forestry and the National Forest supervisors. The Station then mailed to all known mills requests for information on the volume and origin of shingle and shake bolts and associated production of shingles and sawed shakes in 1956.4/ Mail replies were received from 20 active operators, and also some that were idle. Six other active mills were contacted in the field; all but one of these provided the information requested, and production for that one was estimated on the basis of the output of the 8 other active mills in its county.

4/ Figures on shingle and shake bolts are being compiled and will be reported in a later Station publication covering the output of all primary timber products in California in 1956.

Sizes of mine timbers

Mine timbers vary in size according to the use to which a piece is to be put. Mine posts, the vertical supports, were the most common kind reported. They ranged from 5 to 12 inches in diameter and 7 to 20 feet long. Some timbers used were logs 10 to 24 inches in diameter and 16 to 20 feet long. Other kinds of timbers were not sufficiently reported to be singled out here.

Industry structure

Poles and piling.--Practically all the utility poles (power and telephone) and piling in California are handled through concentration yards which peel off the bark unless the pieces are bought peeled, and usually "shave" them (turn to uniform roundness). The yard operators also treat with preservative a large percentage of the material they process. There are only a few yards in California, 10 in 1956, but scores of cutters fell the pole and piling timber in the forest.

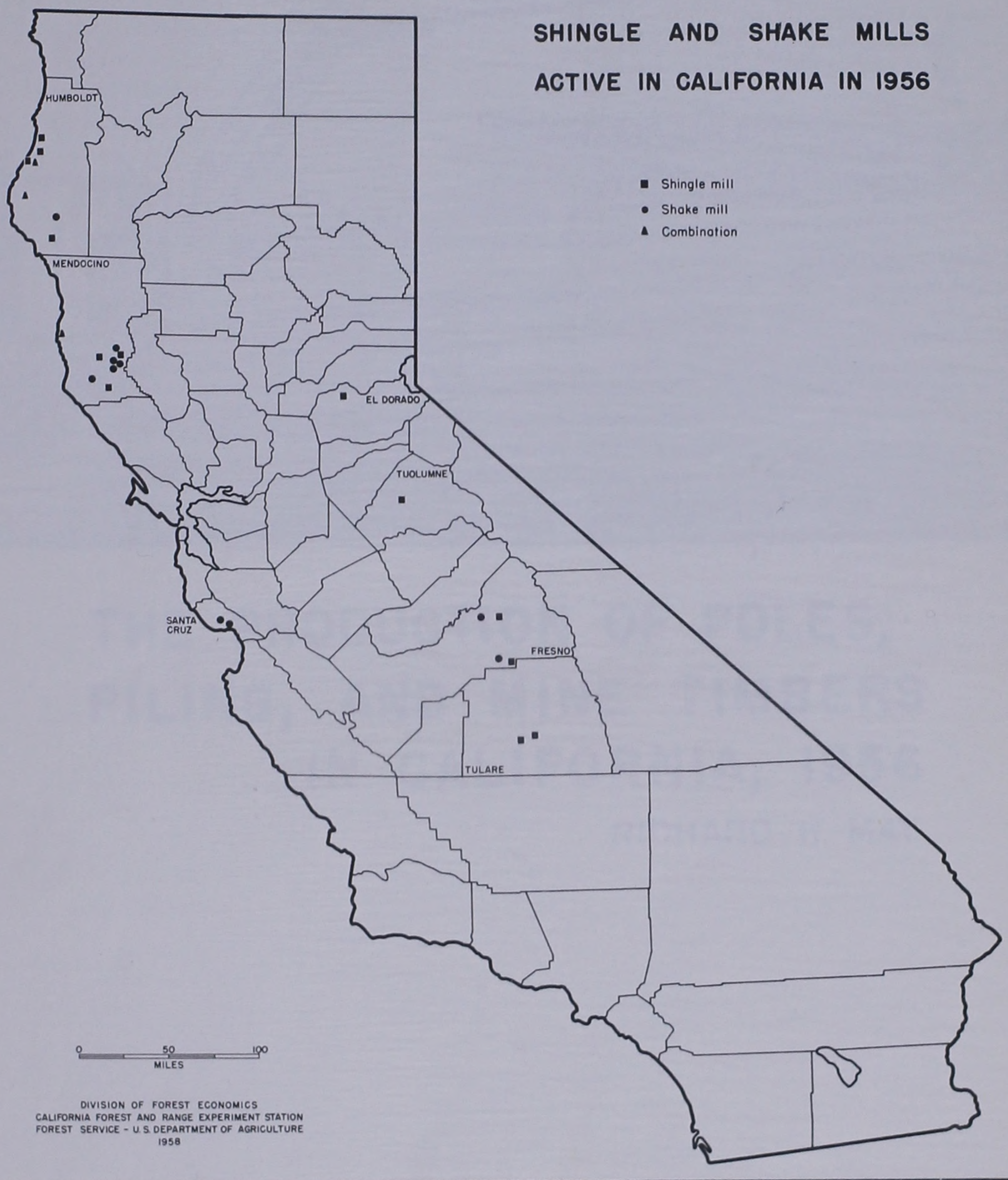
Mine timbers.--Round mine timbers are generally cut by the same timber operators who cut poles and piling. A few timbers go to wood preservation plants for treatment, but most (99 percent in 1950) are not treated. They are sold directly to the mines, or their cutting is contracted by the mines. Hewn mine timbers, and split timbers for lagging, are produced largely by individual workers such as fence-post splitters.

Production trends

Pole production increased almost nine-fold between 1946 and 1956, with most of the increase after 1952. Piling production increased more than six-fold from 1946 to 1952, but has fallen off somewhat since. Round and hewn mine timber production fell 56 percent between 1950 and 1956.

Year:	Poles (Thousand pieces)	Piling (Thousand lin. ft.)	Mine timbers (Thousand cu. ft.)
1946	21.7	172.5	--
1950	12.3	548.0	338
1952	45.3	1,116.4	--
1956	179.3	1,086.5	149

SHINGLE AND SHAKE MILLS ACTIVE IN CALIFORNIA IN 1956



DIVISION OF FOREST ECONOMICS
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION
FOREST SERVICE - U. S. DEPARTMENT OF AGRICULTURE
1958